January 30, 2015

Physical processes subteam meeting

CDFW: Alice Low, Rosemary Hartman, Stacy Sherman, Hildie Spautz (phone), Dave Contreras

DWR: Anitra Pawley, Gardner Jones

ESA: Ramona Swenson, Michelle Orr

Goal: refine state variables and rank metrics and methods, brainstorm data sources for landscape stuff (would be great to eventually create a set of GIS layers to go with the generalized monitoring plan)

Overview of general plan outline

Comments:

- Hypotheses should be relevant to managers - if posed as questions, it would be more clear that we monitor because we don't know. We propose to measure things that are more focused than hypothesis suggests. Check out the South Bay salt pond management plan as example of guidelines for tidal wetland restoration focused on questions "how high to build this?" "what should we plant?"
- Suggestion: explicitly ID which of issues, premises, etc. related to key uncertainties and highlight those as questions; other categorizations of monitoring actions could reflect level of uncertainty; explicitly include adaptive management in plan AND conceptual models
- CDFW monitoring team will revisit issues, premises, hypotheses (using physical processes as example); however, we think that everything left is important- kicked out "un-important" stuff

Categorizing physical processes and metrics

State variables: not expecting to change as a result of restoration, but will affect restoration; divided into sections about location (won't change), climate and weather (will change), baseline conditions (revise to include relevant parts of before and after restoration actions).

Comments:

- "Baseline conditions" are also included with "response variables", so maybe combine in table with column indicating baseline; first measurement will be part of compliance monitoring and will have to be done; becomes response variable thereafter
- "state" variables maybe problematic term, populations will change in response to restoration, maybe call something different: context? Think about who will be standard user and what framework are they used to looking at. EIR, restoration plan, tap into existing terminology as headers (e.g., EIR – "site setting")
- examples not consistent through table, make scale more clear
- Diversions and outfall discrimination difficult, but new law may make this easier in the future

- Distance may not be most appropriate measure – think about hydrologic connectivity. 1st step make map, hydrologic connections path network on top of map; Delta Transformed report used series of rules (p.12) metrics to express function, inundation extent, marsh patch size, ratio looped to dendritic , etc.
- Make sure distance to major water structures also represented (DCC, salinity gates). Include delta outflow with delta hydrology
- Move climate change and sea level rise to meta-analysis section; monitoring reports usually have what we are calling meta analysis in discussion section, response to specific items about whether meeting objectives; meta analysis also programmatic analysis which will likely be done every year (BDCP anyway); ERP had some framework
- CRAM included as method (mostly post restoration, but maybe pre if existing)- Not necessary to specify CRAM…side discussion but some sort of level 2 assessment that is standardized
- Internal hydrology – post construction, but if modifying site that wasn't working well, then pre- so both; important to know water levels for stage, duration; time series of water level, maybe add tidal range/tidal datum in this line; velocity could be important if key aspect of design to keep out SAV
- Add soil characterization - probably done in planning stages anyway

Response variables: core, triggered, special studies

- For turbidity – use both secchi and turbidity meter
- Bed/soil/substrate: grab samples; add peat as special study because lab work required
- Rate of wetland evolution (many metrics smushed all together): repeat all baseline measurements, especially channel cross-section, channel width, area by depth class, change in habitat types; Consider tide when making observations; accuracy on tidal datums not good; rely on measurements rather than modeled levels
- Transects depend on where expect to see change, hydro and sediment modeling help predict
- Water velocity may be more of a triggered metric for physical processes, but could also be in core for other purposes (e.g. measured with beach seining for characterizing efficiency)
- sediment accretion data important moving forward with restoration in sediment starved system, but may not be necessary on every site. Should add cautions about pitfalls with certain gear (e.g. SETs)
- Consider physical metrics for predator hot spots